3          detecting circumferential obstacles as bodies;

4          obtaining data from a rotating pulsed infrared laser beam scanner

5   apparatus including a time when the beam reaches a first edge of the obstacle

6   and a time when the beam reaches a second edge of the obstacle;

7          determining a relative distance from the scanner apparatus to the

8   obstacle; [and]

9          determining a time to collision with the obstacle; and [.]

10         determining a braking force to avoid a collision with the obstacle.


Please add the following new claims:


1      12.    (NEW)   The method of avoiding a vehicle collision of claim 11,

2   further comprising determining a critical point at which an absolute value of da/dt

3   approaches zero.


1      13.    (NEW)   The method of avoiding a vehicle collision of claim 12,

2   wherein d etermining t he r elative d istance a nd d etermining t he t ime of c ollision

3   are initiated at the critical point.


1      14.    (NEW)   The method of avoiding a vehicle collision of claim 11,

2   further comprising determining a relative angular velocity of the obstacle.

1      15.    (NEW)  The method of avoiding a vehicle collision of claim 11,

2      wherein determining the time of collision comprises computing a second order

3      factor.


1      16.    (NEW)  The method of avoiding a vehicle collision of claim 11,

2      further comprising determining the bumpiness of a road surface.


1      17.    (NEW)  The method of avoiding a vehicle collision of claim 16,

2      wherein determining the braking force to avoid a collision with the obstacle

3      comprises determining a first braking force in a case where the time of collision is

4      less than 1.5 seconds and a second braking force in a case where the road is

5      bumpy.


1      18    (NEW)  The method of avoiding a vehicle collision of claim 11,

2      wherein determining the time of collision further comprises determining vertical

3      and horizontal components.


1      19    (NEW)  The method of avoiding a vehicle collision of claim 11,

2      further comprising determining a rate of approach of the vehicle and the obstacle.


1      20.    (NEW)  The method of avoiding a vehicle collision of claim 11,

2      further comprising providing a plurality of channels having a bandwidth of about

3      100 kHz.

1      21.   (NEW)  The method of avoiding a vehicle collision of claim 11,

2   wherein t he obtaining a nd d etermining s teps a re p erformed i n a  point to p oint

3   vector processing manner.

1      22.   (NEW)  The method of avoiding a vehicle collision of claim 11,

2   further c omprising u sing a n a nalog c ircuit t o p rocess t he t ime w hen the beam

3   reaches the first edge of the obstacle and the time when the beam reaches the

4   second edge of the obstacle, the relative distance from the scanner apparatus to

5   the obstacle, a relative angular velocity of the obstacle, an acceleration of the

6   obstacle and a derivative of the acceleration.

## REMARKS

The claims have been amended to more clearly claim the invention. No new matter has been added.

## CONCLUSION

Applicant respectfully requests entry of the above amendments and submits that no new matter has been added thereby.

Date: July 28, 2003         By:

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